Tannerella forsythensis prtH genotype and association with periodontal status

Type: Article

Abstract:

Background: The prtH gene of Tannerella forsythensis encodes for a cysteine protease possessing virulent properties. Subgingival colonization by T. forsythensis with this genotype has been suggested to be a discriminator between periodontal health and disease. This study examined the prevalence of T forsythensis prtH genotype in subgingival plaque and its association with periodontal disease progression and current disease status. Methods: Subjects harboring T. forsythensis in their subgingival plaque were identified using real-time polymerase chain reaction (PCR). The presence or absence of the prtH genotype was assessed by conventional PCR. Probing depths and relative attachment levels were also assessed. Results: The prtH genotype was detected in 13 of 56 (23.2%) subjects harboring T. forsythensis in their subgingival plaque. Periodontal disease progression was defined as two or more sites with >= 2 mm attachment loss in the previous 2-year period; current disease was defined as four or more sites with probing depths A mm. The odds of periodontal disease (progression and/or current disease) were 1.55 times greater in subjects harboring prtH genotype T. forsythensis than in subjects in whom prtH was not detected. The prtH genotype was associated with higher numbers of T forsythensis. In subjects with high levels of T. forsythensis, prtH genotype was associated with an increased extent of periodontal disease 2 years subsequently. Conclusions: These results show that T. forsythensis prtH genotype is associated with high levels of T. forsythensis. However, further work is needed to determine whether it also is a useful marker of periodontal disease progression in T forsythensis-infected subjects.

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Source	Journal of Periodontology
ISSN	0022-3492
DOI	10.1902/jop.2007.060161
Volume (Issue)	78(2)
Page	344-350
Year	2007

Keyword:

Cysteine endopeptidases, Genotype, Periodontal disease, Virulence, bacterial protein, cysteine proteinase, PrtH protein, bacteria, unclassified drug, virulence factor, article, Bacteroides, case control study, disease course, enzymology, female, genetics, human, male, microbiology, middle aged, nonparametric test, pathogenicity, polymerase chain reaction,risk, statistical model, tooth plaque, Bacterial Proteins, Case-Control Studies, Dental Plaque, Disease Progression, Humans, Logistic Models, Odds Ratio, Periodontal Diseases, Statistics, Nonparametric, Virulence Factors
Please Cite As:

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